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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/635,408	08/06/2003	Tatsuo Kawaguchi	791_227	8800

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EXAMINER	
ADDISON, KAREN B	
ART UNIT	**PAPER NUMBER**
2834	

DATE MAILED: 09/19/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/635,408	KAWAGUCHI ET AL.	
	Examiner	Art Unit	
	Karen B. Addison	2834	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-12* is/are pending in the application.

4a) Of the above claim(s) *13-17* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-12* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

Applicant's election with traverse of claims 1-12 in the reply filed on 3/17/06 is acknowledged. The traversal is on the ground(s) that the subject matter of claims 1-17 is sufficiently related an thorough and complete search for the subject matter of the elected claims would necessarly emcompass a thorough and complete search for the subject matter of the non-elected claims. This is not found persuasive because, In the instant case the product as claimed can be made by another material different process such as electroplating or sintering the electrode on to the Piezoelectric member. Because these inventions are independent or distinct for the reasons given above and have acquired a separate status in the art in view of their different classification, restriction for examination purposes as indicated is proper.

The requirement is still deemed proper and is therefore made FINAL.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-12 rejected under 35 U.S.C. 102(b) as being anticipated by Takeuchi(6794723).

Takeuchi discloses a piezoelectric actuator in figs 1-37. Tekeuchi discloses a plural dimensional piezoelectric actuator array comprising: a piezoelectric (fig.1) which comprises a plate or pillar shape (1) piezoelectric shaped at least one pair of electrodes(18,19) formed on the piezoelectric member said, piezoelectric device being driven based on a piezoelectric effect of the piezoelectric member and being disposed in a planar form(2) wherein the piezoelectric device constitutes a piezoelectric device substrate(2), is formed in a planar comb (fig1) as a whole in which comb teeth (31) are connected to one another at one end of the piezoelectric device(31), and comb-teeth portions thus formed are functioned as a plurality of driving portions(31)wherein a guide substrate(2) having a concave portion for housing(fig.8b) at least a part of the piezoelectric device substrate is further provided in a predetermined position, and wherein the guide substrate (35)and the piezoelectric device substrate are integrally unified in such a manner that a resultant is readily usable for formation of multiply stuck structural body. Wherein, the guide substrate having a concave portion(356) for housing at least a part of the piezoelectric device(31) substrate is further provided in a predetermined position, and wherein the guide substrate(2) and the piezoelectric device substrate are integrally unified in such a manner that a resultant is readily usable for formation of multiply stuck structural body (24-37). Wherein, the guide substrate fig30.(2) includes projections(4) and/or ridges (fig12) arranged at an interval corresponding to a width between the driving portions positioned adjacently each other(fig.30) in a bottom surface of the concave portion(9) for housing, and wherein the respective projections and/or ridges are inserted between driving portions positioned

adjacently each other(fig.30), and the guide substrate and the piezoelectric device substrate are integrally unified(fig.30). Takeuchui also show, the wiring circuit fig.12 (371) further disposed on the guided substrate (472) and connected to the electrodes (321) and the piezoelectric array having a plural number of one dimensional piezoelectric actuator arrays multiply stuck(fig.12,30) and a plurality of driving portions structurally aligned and arrange in a plural number (fig.12). Wherein, the piezoelectric device (fig 12) constitutes a piezoelectric device substrate (472) formed in a planar comb shape as a whole in which comb teeth(18,19) are connected to one another at one end(13) of the piezoelectric device, and comb teeth portions thus formed are functioned as a plurality of driving portions370). Takeuchi also disclose, a guide substrate (472) having a concave portion(13) for housing at least a part of the piezoelectric device substrate. The piezoelectric substrate, also provided a predetermined position wherein the guide substrate(371) and the piezoelectric device substrate(472) are integrally unified in such a manner, that the resultant is readily usable for formation of multiply stack structural body(fig.12) Wherein, the guide substrate includes projections(18,19) and/or ridges arranged at an Interval corresponding to a width between the driving portions positioned adjacently each other in a bottom surface of the concave portion(13) for housing, the guide substrate. Takeuchi also disclose, a first guide frame member fig.8 (303) disposed additionally: the first guide frame being of a hollow box (303)shape and having a plurality of pairs of guide grooves(6,5) for housing a plurality of piezoelectric device substrates(31) formed on two inner surfaces facing each other of the guide frame member(303) in accordance

with a number of piezoelectric device substrates(31) to be housed in an aligned state in a predetermined position at a predetermined interval, and the guide grooves being arranged at an interval corresponding to a thickness of the piezoelectric device substrate(fig.8b-8c). Wherein, the plurality of piezoelectric device substrates is inserted and housed in the corresponding guide grooves(431) of the first guide frame member(303), and the plurality of driving portions(31) are structurally aligned/arranged. Takeuchi also show, a lid member(116,117) in which slits are formed at an interval same as an interval between to guide groves positioned adjacently each other and the slits(see 8-8b) having a shape corresponding to a shape of tip ends of the plurality of driving position(31), wherein the tip ends of the plurality of driving portions(31) are inserted into the slits to be fixed at a predetermined position respectively and the guide substrate having a concave portion for housing at least a part of each of the plurality of piezoelectric devices and wherein the guide substrate and the plurality of piezoelectric devices are integrally unified, thereby a resultant is easily multiply stack to form a multiply stack structural body. Takeuchi also disclose, a piezoelectric devices(31) are fixed by inserting the plurality of piezoelectric devices to the corresponding plurality of openings of the housing space of the second guide frame member(303), thereby the plurality of piezoelectric devices(31) are spatially aligned/arranged. Wherein, the wiring components(fig.12) having a structure aligned/arranged in a spatially manner same as the plurality of driving portions being connected to respective electrodes.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Karen B. Addison whose telephone number is 571-272-2017. The examiner can normally be reached on 8:00 to 4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Darren Schuberg can be reached on 571-272-2044. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

KBA
8/21/06

TOM DOUGHERTY
PRIMARY EXAMINER